



DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R4-ES-2013-0100]

[4500030113]

RIN 1018-AY72

Endangered and Threatened Wildlife and Plants; Threatened Status for *Arabis georgiana* (Georgia rockcress)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service, propose to list *Arabis georgiana* (Georgia rockcress), a plant species in Georgia and Alabama, as threatened under the Endangered Species Act of 1973, as amended (Act). If we finalize this rule as proposed, it would add this species to the List of Endangered and Threatened Plants and extend the Act's protections to this species.

DATES: We will accept comments received or postmarked on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].**

Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES** section, below) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for public hearings, in writing, at the address shown in the **FOR FURTHER INFORMATION CONTACT** section by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].**

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal:

<http://www.regulations.gov>. In the Search box, enter FWS–R4–ES–2013–0100, which is the docket number for this rulemaking. Then, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on “Comment Now!”

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: FWS–R4–ES–2013–0100; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, MS 2042–PDM; Arlington, VA 22203.

We request that you send comments **only** by the methods described above. We will post all information received on <http://www.regulations.gov>. This generally means

that we will post any personal information you provide us (see the **Information Requested** section below for more details).

FOR FURTHER INFORMATION CONTACT: Sandy Tucker, Field Supervisor, U.S. Fish and Wildlife Service, 105 Westpark Dr., Suite D, Athens, GA 30606; telephone 706-613-9493; facsimile 706-613-6059. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:

We will refer to *Arabis georgiana* by its common name, Georgia rockcress, in this proposed rule.

Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other concerned governmental agencies, Native American tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

- (1) Georgia rockcress's biology, range, and population trends, including:
 - (a) Biological or ecological requirements of the species, including habitat requirements for growth and reproduction;
 - (b) Genetics and taxonomy;
 - (c) Historical and current range, including distribution patterns;
 - (d) Historical and current population levels, and current and projected trends; and
 - (e) Past and ongoing conservation measures for the species, its habitat, or both.
- (2) Factors that may affect the continued existence of the species, which may include habitat modification or destruction, overutilization, disease, predation, the inadequacy of existing regulatory mechanisms, or other natural or manmade factors affecting its continued existence.
- (3) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to this species and existing regulations that may be addressing those threats.
- (4) Additional information concerning the historical and current status, of this species, including the locations of any additional populations of this species.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or threatened species must be made “solely on the basis of the best scientific and commercial data available.”

You may submit your comments and materials concerning this proposed rule by one of the methods listed in the **ADDRESSES** section. We request that you send comments **only** by the methods described in the **ADDRESSES** section.

If you submit information via <http://www.regulations.gov>, your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on <http://www.regulations.gov>. Please include sufficient information with your comments to allow us to verify any scientific or commercial information you include.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on <http://www.regulations.gov>, or by appointment, during normal business hours, at the U.S.

Fish and Wildlife Service, Ecological Services Office in Athens, Georgia (see **FOR FURTHER INFORMATION CONTACT**).

Public Hearing

Section 4(b)(5) of the Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days after the date of publication of this proposed rule in the **Federal Register**. Such requests must be sent to the address shown in the **FOR FURTHER INFORMATION CONTACT** section. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing.

Peer Review

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of three appropriate and independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our listing determination is based on scientifically sound data, assumptions, and analyses. The peer reviewers have expertise in the species' biology, field identification, and habitat requirements; have firsthand experience working with this species; and are currently reviewing the species status report, which will inform

our determination. We will invite comment from the peer reviewers during the public comment period for this proposed rule (see **DATES**).

Previous Federal Actions

The Act (16 U.S.C. 1531 *et seq.*) directed the Secretary of the Smithsonian Institution to prepare a report on endangered and threatened plant species, which was published as House Document No. 94–51. The Service published a notice on July 1, 1975 (40 FR 27824), in which it announced that more than 3,000 native plant taxa named in the Smithsonian’s report, as well as other taxa ,including Georgia rockcress, would be reviewed for possible inclusion in the List of Endangered and Threatened Plants. The 1975 notice was superseded on December 15, 1980 (45 FR 82480), by a new comprehensive notice of review for native plants that took into account the earlier Smithsonian report and other accumulated information. Complete updates of the notice of review for native plants were published on September 27, 1985 (50 FR 39526), on February 21, 1990 (55 FR 6184), and on September 30, 1993 (58 FR 51144). In these documents, Georgia rockcress was listed as a Category 2 candidate, a taxon for which information in the possession of the Service indicated that proposing to list as endangered or threatened was possibly appropriate, but for which sufficient data on biological vulnerability and threats were not available to support listing rules. Further biological research and field study usually were necessary to ascertain the status of taxa in this category. On February 26, 1996, the Service published a notice of review for wildlife and plants that eliminated candidate categories, and Georgia rockcress was not included

as a candidate in that document. Georgia rockcress was again elevated to candidate status on October 25, 1999 (64 FR 57534). The plant appeared in subsequent candidate notices of review on October 30, 2001 (66 FR 54808), June 13, 2002 (67 FR 40657), May 4, 2004 (69 FR 24876), May 11, 2005 (70 FR 24870), September 12, 2006 (71 FR 53756), December 6, 2007 (72 FR 69034), December 10, 2008 (73 FR 75176), November 9, 2009 (74 FR 57804), November 10, 2010 (75 FR 69222), October 26, 2011 (76 FR 66370), and November 21, 2012 (77 FR 69993). We received an additional petition on May 11, 2004, for this species, which we responded to in the May 11, 2005, candidate notice of review (70 FR 24870); the species retained its designation as a candidate as a result.

Elsewhere in today's **Federal Register**, we propose to designate critical habitat for Georgia rockcress under the Act.

Background

Georgia rockcress was first collected in 1841, by Boykin from the vicinity of the Chattahoochee River in Georgia. Several other collections of this species were made in the late 1800s; however, Harper was the first to document its distinctiveness, after seeing it in fruit in 1901, on the bank of the Chattahoochee River in Stewart County, Georgia. Harper later described it as a distinct species in 1903 (Allison 1995, p. 4). Georgia rockcress was maintained as a distinct species (*Arabis georgiana*) in Hopkins's 1937 monograph of *Arabis* in the eastern United States (Allison 1995, p. 3).

Georgia rockcress is a perennial herb up to 90 centimeters (cm) (35 inches (in.)) tall. The basal leaves are oblanceolate (lance-shaped but broadest above the middle and tapering toward the base), rounded at the apex, toothed on the margins, 4 to 8 cm (2 to 3 in.) long, and with or without long, tapered petioles. The basal leaves form a basal rosette and usually persist through the fruiting season with green lower surfaces. The stem leaves are alternate, lanceolate (lance-shaped) to narrowly elliptic, 1 to 5 cm (0.4 to 2.0 in.) long, and somewhat clasping around the stems. The upper surfaces of the stem leaves have stiff, branched hairs when young and are smoothish when mature. All leaves tend to be finely hairy. The flowers are borne in a terminal inflorescence (cluster at the tip of the stem) that is somewhat loosely branched. There are four, white petals that measure 6 to 10 millimeters (mm) (0.2 to 0.4 in.) long. The fruit stands erect as a slender (1 mm or 0.04 in. wide), relatively long (5 to 7 cm or 2 to 3 in.) pod that splits in two, leaving behind a thin, papery, lengthwise partition. Seeds are brownish, oblong, about 2 mm (0.1 in.) long, and are borne in single rows on each side of the partition. Flowering occurs from March to April, with fruiting beginning in May and into early July (Allison 1995, p. 4; Patrick et al. 1995, pp. 17-18; Chafin 2007, pp. 47-48; Schotz 2010, p. 3).

Georgia rockcress is primarily associated with high bluffs along major river courses, with dry-mesic to mesic soils of open rocky woodland and forested slopes, generally within regions underlain or otherwise influenced by granite, sandstone, or limestone. Georgia rockcress grows in a variety of dry situations, including shallow soil accumulations on rocky bluffs, ecotones of sloping rock outcrops, and sandy loam along

eroding riverbanks. It is occasionally found in adjacent mesic woods (or glades), but it will not persist in heavily shaded conditions. This species is adapted to high or moderately high light intensities, generally with a mature canopy providing partial shading; the habitat supports a relatively closed to open canopy typified by *Juniperus virginiana* (eastern red cedar), *Ostrya virginiana* (American hophornbeam), *Quercus muehlenbergii* (chinquapin oak), *Fraxinus americana* (white ash), *Acer barbatum* (southern sugar maple), and *Cercis canadensis* (eastern redbud) with a rich diversity of grasses and forbs characterizing the herb layer, which might include: *Carex cherokeensis* (Cherokee sedge), *Bromus purgans* (hairy woodland brome), *Chasmanthium sessiliflorum* (longleaf woodoats), *Piptochaetium avenaceum* (blackseed speargrass), *Pellaea atropurpurea* (purple cliffbreak), *Melica mutica* (two-flower melic grass), *Poa autumnalis* (autumn bluegrass), *Delphinium alabamicum* (Alabama larkspur), *Myosotis macrosperma* (largeseed forget-me-not), *Desmodium ochroleucum* (cream ticktrefoil), *Dodecatheon meadia* (shooting star), *Solidago auriculata* (eared goldenrod), *Symphyotrichum shortii* (Short's aster), and many more. The combination of a mature canopy on extreme slope with shallow soils lends this habitat to discrete disturbance events with wind-thrown trees or sloughing soils that create canopy gaps and preclude leaf litter accumulation. Georgia rockcress exploits the exposed soil and increased light created by the canopy gap dynamics.

This species occurs on soils that are circumneutral to slightly basic (or buffered) from the Lower Gulf Coastal Plain, Upper Gulf Coastal Plain, Red Hills, Black Belt, Piedmont, and the Ridge and Valley Physiographic Provinces (Schotz 2010, pp. 4-6).

Extensive searches have been conducted for this species throughout these physiographic provinces in both Alabama and Georgia (Allison 1995, pp. 1-31; Allison 1999, pp. 1-7). Allison (1995, pp. 18-31) conducted the first comprehensive survey and compiled existing data on known occurrences. As part of this effort, he surveyed 205 sites over nine counties in Georgia and discovered only four previously unknown populations (a 2 percent success rate). Schotz (2010, p. 7) visited a total of 44 sites (16 historically occupied and 28 new sites), and of the 16 historically occupied sites, 14 were still extant and 2 sites appeared to be extirpated. In addition, one new site was discovered. Currently, 18 populations are documented to occur across Alabama and Georgia. Twelve of these occur solely in Alabama; five occur solely in Georgia; and one extends into both States. Of the 12 populations in Alabama, 6 occur in the Ridge and Valley region (all in Bibb County), and 6 occur in the Coastal Plain region (Dallas (2), Elmore, Wilcox, Monroe and Sumter Counties). Of the five populations found solely in Georgia, three occur in the Ridge and Valley region (Floyd and Gordon Counties); one occurs in the Piedmont region (Harris/Muscogee Counties); and one occurs in the Coastal Plain region (Clay County). The one population that extends into both States (Russell County, AL/ Chattahoochee County, GA) also occurs in the Coastal Plain region (Allison 1995, pp. 13-14; Allison 1999, pp. 1-7; Moffett 2007, p. 1; Schotz 2010, pp. 48-50). A historical location from Stewart County, Georgia, has not been relocated despite repeated searches, including the most recent attempt in 2005 (Moffett 2007, p. 1).

Georgia rockcress is rare throughout its range. Moffett (2007, p. 8) found approximately 2,140 plants from all known sites in Georgia. During surveys in 1999,

Allison (1999, pp. 1-7) found that populations of this species typically had a limited number of individuals restricted over a small area. Of the nine known localities (six populations) in Georgia, Allison (1995, pp. 18-28) reported that six sites consisted of only 3 to 25 plants, and the remaining three sites had 51 to 63 individuals. However, a 2007 survey, by Moffett (2007, p. 8), of the six Georgia populations resulted in counts of 5 or fewer plants at one population; 30 to 50 plants at two populations; 150 plants at one population; and two populations (greatly expanded from 1995) of almost 1,000 plants each. In 2009, plants could not be relocated at one Floyd County, Georgia, site, and only one plant was seen at another site where 25 to 50 had been documented in 2007 (Elmore 2010, p. 1). Moffett (2007, pp. 1-2) indicated that the overall status of the three populations in the Ridge and Valley ecoregion (Floyd and Gordon Counties, Georgia) was poor, as these populations tended to be small, and declining in size and vigor. The largest population in Georgia is the multi-site Goat Rock Dam complex in the Piedmont province (Harris/Muscogee Counties) with approximately 1,000 flowering stems at last census (Moffett 2007, p. 2). Fort Benning also supports a vigorous population with an estimated 1,000 plants (Moffett 2007, p. 2). Georgia rockcress has been extirpated from its type locality near Omaha, Georgia, in Stewart County (Moffett 2007, p. 2). At another site, Blacks Bluff, Georgia, rockcress had declined to a few individuals by 2007 (Moffett 2007, p. 2), but 100 individuals were replanted in 2009. During a count done in 2013, 31 individuals were found to be surviving at the site, and more than 500 seeds were broadcast to supplement this population (Goldstrohm 2013, p. 1).

Schotz (2010, p. 8) documented fewer than 3,000 plants from all known sites in Alabama. Populations from Bibb County, Alabama, had between 16 and 229 plants, with 42 and 498 from Dallas County, 47 from Elmore County, 414 from Monroe County, 842 from Russell County, 4 from Sumter County, and 551 from Wilcox County. Allison (1999, pp. 2-4) originally documented this species at 18 localities (representing seven populations) in Bibb County. However, one of these Bibb County populations was not relocated during surveys in 2001 (Allison 2002, pers. comm.), and plants were not relocated at two other sites in Alabama (Schotz 2010, pp. 13 and 57). Therefore, it is believed that Georgia rockcress has been extirpated from these three sites in Alabama.

Summary of Factors Affecting the Species

The Act directs us to determine whether any species is an endangered species or a threatened species based on the factors, singly or in combination, that are set forth in section 4(a)(1) of the Act, which are:

- (A) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) Overutilization for commercial, recreational, scientific, or educational purposes;
- (C) Disease or predation;
- (D) The inadequacy of existing regulatory mechanisms; or
- (E) Other natural or manmade factors affection its continued existence.

In this section, we summarize the biological condition of the species and its resources, and the influences on such to assess the species' overall viability and the risks to that viability.

Georgia rockcress generally occurs on steep river bluffs often with shallow soils overlaying rock or with exposed rock outcroppings. These edaphic conditions result in micro-disturbances, such as sloughing soils with limited accumulation of leaf litter or canopy gap dynamics, possibly with wind-thrown trees, which provide small patches of exposed mineral soil in a patchy distribution across the river bluff (Schotz 2010, p. 6). While Georgia rockcress needs small-scale disturbances with slightly increased light, limited competition for water, and exposed soils for seed germination, the species is a poor competitor and is easily outcompeted by aggressive competitors (Alison 1995, p. 8; Moffett 2007, p. 4; Schotz 2010, p. 9). Natural large-scale disturbances, such as fire and catastrophic flooding, are unlikely to occur on the steep river bluffs occupied by Georgia rockcress. However, human-induced disturbance has fragmented river bluff habitats and created conditions favorable to invasion of nonnative species (Factor E).

Populations of Georgia rockcress are healthiest in areas receiving full or partial sunlight. This species seems to be able to tolerate moderate shading, but it exists primarily as vegetative rosettes in heavily shaded areas (Moffett 2007, p. 4). Those populations occurring in forested areas will decline as the forest canopy closes. Allison (1999, p. 4) attributed the decline of a population in Bibb County, Alabama, to canopy closure. In addition, the small number of individuals at the majority of the sites makes

these populations vulnerable to local extinctions from unfavorable habitat conditions such as extreme shading.

Habitat fragmentation is a major feature of many landscapes within the eastern deciduous forest and creates boundaries or edges where disturbed patches of vegetation are adjacent to intact habitat. Disturbance events fragment the forest, creating edge habitat and promoting the invasion of nonnative species (Honu and Gibson 2006, pp. 263-264). Edges function as sources of propagules for disturbed habitats and represent complex environmental gradients with changes in light availability, temperature, humidity, wind speed, and soil moisture, with plant species responding directly to environmental changes (Meiners et al. 1999, p. 261). Edge effect, including any canopy break due to timber harvest, fields, or maintained rights-of-way, may penetrate as far as 175 meters (574 feet), resulting in changes in community composition (Honu and Gibson 2006, p. 264; Gehlhausen et al. 2000, p. 21; Meiners et al. 1999, p. 266; Fraver 1994). Roads create a canopy break, destroy the soil profile, and disrupt hydrology of the bluff habitat. Roads are also known corridors for the spread of invasive plant species (Forman et al. 2003, pp. 75-112), as disturbed soil and the maintenance of open, sunny conditions create favorable conditions where invasive species can establish and spread into the forest interior (Fraver 1994, pp. 828-830). Aspect is an important factor in determining how forest microclimate and vegetation are influenced by the external environment (Gehlhausen et al. 2000, p. 30; Fraver 1994, pp. 828-830). Aspect likely increases the distance that the edge effect can influence microclimate and plays an important role on the steep bluff habitat occupied by Georgia rockcress. Edge effects are reduced by a

protective border with buffers that eliminate most microhabitat edge effect (Honu and Gibson 2006, p. 255; Gehlhausen et al. 2000, p. 32).

Currently, habitat degradation, more than its outright destruction, is the most serious threat to this species' continued existence. Most of the Coastal Plain rivers surveyed by Allison (1995, p. 11) were considered unsuitable for Georgia rockcress because their banks had been disturbed to the point where there was no remaining vegetative buffer. Recent habitat degradation (i.e., vegetation denuded and replaced by hard-packed, exposed mineral soil) has occurred at several Georgia sites in association with residential development and campsites atop the bluffs (Moffett 2007, pp. 3-4). Disturbance associated with timber harvesting, road building, and grazing in areas where the plant exists has created favorable conditions for the invasion of nonnative weeds in this species' habitat (Factor E) (Schotz 2010, p. 10). Timber operations that remove the forest canopy promote early successional species and result in the decline of Georgia rockcress (Schotz 2010, p. 10). Encroachment of development in the form of bridges, roads, houses, commercial buildings, or utility lines allowing for the introduction of nonnative species (Factor E) also result in the decline of Georgia rockcress (Schotz 2010, pp. 9-10; Moffett 2007, pp. 2-7; Alison 1995, pp. 7-18).

The riparian bluff habitat surrounding 17 of the known populations has been adversely impacted in some way, and in many cases the habitat has suffered multiple impacts. Blacks Bluff, Fort Benning (Georgia), McGuire Ford, Limestone Park, Prairie Bluff, and Fort Benning (Alabama) all have roads that bisect the habitat while Murphys

Bluff, Pratts Ferry, Fort Tombecbee, and Resaca Bluffs have roads associated with bridges that impact bluff habitat (Schotz 2010, pp. 20-57; Moffett 2007, pp. 5-8; Allison 1999, pp. 3-8; Allison 1995, pp. 18-28). Housing development requires a road network and further impacts bluff habitat by creating canopy gaps and soil disturbances, with landscaping that may introduce nonnative plants. McGuire Ford, Prairie Bluff, Fort Tombecbee, and Creek Side Glades have bluff habitat that has been impacted by housing development (Schotz 2010, pp. 20-57; Allison 1999, pp. 3-8). Commercial development has the same impact as housing; Resaca Bluff and Fort Tombecbee are impacted by commercial development (Schotz 2010, pp. 20-57; Moffett 2007, pp. 5-8; Allison 1999, pp. 3-8; Allison 1995, pp. 18-28). McGuire Ford and Fort Toulouse have maintained fields for pasture or recreational use (Schotz 2010, pp. 20-57; Allison 1999, pp. 3-8). The removal of the canopy to maintain a field provides an opportunity for nonnatives to invade. Utility lines have created canopy breaks at Creek Side Glades, Little Schulz Creek, and Goat Rock Dam (Schotz 2010, pp. 20-57; Moffett 2007, pp. 5-8; Allison 1999, pp. 3-8; Allison 1995, pp. 18-28). Timber harvesting activities create soil disturbance and canopy breaks that provide access for nonnative plants to invade. Durant Bend, Portland Landing, Fort Gains, Pratts Ferry, Fern Glade and Six Mile Creek, and Whitmore Bluff have all been impacted by timber harvesting activities (Schotz 2010, pp. 20-57; Moffett 2007, pp. 5-8; Allison 1999, pp. 3-8; Allison 1995, pp. 18-28). While these impacts are to the bluff habitat that surrounds these populations, these disturbances eliminate potential habitat for expansion of populations, fragment the populations, and introduce nonnative species (Factor E).

Table 1. Impacts to populations of Georgia rockcress from human-induced factors and nonnative plants.

Site Name	County/State	Human-Induced Impact (Factor A)	Impacted by Nonnative Plants (Factor E)
Fort Tombecbee	Sumter/AL	Road with bridge, Housing, Commercial	None
Marshalls Bluff	Monroe/AL	Quarry	None
Prairie Bluff	Wilcox/AL	Road, Housing, Hydropower	Chinese privet and Japanese honeysuckle
Portland Landing River Slopes	Dallas/AL	Timber harvest, Hydropower	China berrytree, Japanese honeysuckle, and kudzu
Durant Bend	Dallas/AL	Timber harvest	Chinese privet and Japanese honeysuckle
Murphys Bluff Bridge Cahaba River	Bibb/AL	Road with bridge	Chinese privet, Japanese honeysuckle, and others
Creekside Glades and Little Schulz Creek	Bibb/AL	Housing, Utility lines	None
Cottingham Creek Bluff and Pratts Ferry	Bibb/AL	Road with bridge, Timber harvest	Chinese privet and Japanese honeysuckle
Fern Glade and Six Mile Creek	Bibb/AL	Timber harvest	Chinese privet and Japanese honeysuckle
Browns Dam Glade North and South	Bibb/AL	None	Chinese privet
McGuire Ford Limestone Park	Bibb/AL	Road, Housing, Maintained field	None
Fort Toulouse State Park	Elmore/AL	Maintained field/recreation	Japanese honeysuckle
Fort Gaines Bluff	Clay/GA	Timber harvest	Japanese honeysuckle
Fort Benning (GA) and (AL)	Chattahoochee/GA and Russell/AL	Road	Chinese privet and Japanese honeysuckle
Goat Rock North and South	Harris, Muscogee/GA	Hydropower and Utility lines	Chinese privet and Japanese honeysuckle
Blacks Bluff Preserve	Floyd/GA	Road, Quarry	Napalese browntop and Japanese honeysuckle
Whitmore Bluff	Floyd/GA	Timber harvest	Japanese honeysuckle
Resaca Bluffs	Gordon/GA	Road with bridge, Commercial	Chinese privet and Japanese honeysuckle

Quarrying destroys the bluff habitat by removing the canopy and soil. The Blacks Bluff population of Georgia rockcress in Floyd County, Georgia, appears to be a surviving remnant of a once larger population. The primary habitat at this locality has been extensively quarried (Allison 1995, p. 10). The Marshalls Bluff population in Monroe County, Alabama, is adjacent to an area that was once quarried (Schotz 2010, pp.

45-47). Rock bluffs along rivers have also been favored sites for hydropower dam construction. The construction of Goat Rock Dam in Harris County, Georgia, destroyed a portion of suitable habitat for a population of Georgia rockcress, and the current population there may also represent a remnant of a once much larger population (Allison 1995, p. 10). The Prairie Bluff and Portland landing populations in Wilcox and Dallas Counties, Alabama, occur on the banks of William “Bill” Dannelly Reservoir, where potential habitat was likely inundated (Schotz 2010, pp. 41 and 56). Due to the obscure nature of Georgia rockcress, it is likely that other populations on rocky bluffs, in the Piedmont and Ridge and Valley provinces, were destroyed by quarrying or inundated by hydropower projects (Allison 1995, p. 10).

Conservation efforts by The Nature Conservancy (TNC) in Bibb County, Alabama, have included the land acquisition of the entire population of Georgia rockcress at Browns Dam Glade and a small portion of the Cottingham Creek Bluff population, and the proposed acquisition of the Six Mile Creek population.

The Blacks Bluff Preserve population, Floyd County, Georgia, is in private ownership with a conservation easement held by TNC on the property. There were 27 Georgia rockcress reported on this site in 1995; however, the presence of nonnative species has since extirpated Georgia rockcress from this site. The Georgia Plant Conservation Alliance (GPCA) and TNC agreed to bolster the existing population with plants grown from seed collected at the two nearby (Ridge and Valley physiographic province) populations: Whitmore Bluff and Resaca Bluffs. The Chattahoochee Nature

Center collected seed and grew 35 plants from Whitmore's Bluff and 65 plants from Resaca Bluffs. In 2008, 100 Georgia rockcress plants were planted in this unit, with 31 Georgia rockcress surveyed on this site in 2013 (Goldstrohm 2013, p. 3). In April 2013, an additional 15,000 seeds were sown directly onsite to attempt to recruit new plants to this population (Goldstrohm 2013, p.1).

Two populations are on land owned by the Federal Government, and two on land owned by the State of Alabama. In Federal ownership, the entire Fern Glade population, Bibb County, Alabama, is on land within the Cahaba National Wildlife Refuge. Also, along the banks of the Chattahoochee River in Russell County, Alabama, and Chattahoochee County, Georgia, the entire population at Fort Benning is on land that is in Federal ownership. The Department of Defense is aware of the two sites on the Fort Benning property and is working with TNC to monitor and provide for the conservation of these populations (Elmore 2010, pp. 1-2). However, the current integrated natural resources management plan (INRMP) for Fort Benning does not address Georgia rockcress or its habitat (INRMP 2001). The Prairie Bluff population in Wilcox County, Alabama, may be within an area under a U.S. Army Corps of Engineers easement. The State of Alabama owns Fort Tombecbee in Sumtner County and Fort Toulouse State Park in Elmore County, but there is no protection afforded to these State-owned properties.

The majority of the Goat Rock Dam population in Georgia (Harris/Muscogee Counties) is mostly located on buffer lands of the Georgia Power Company and receives a level of protection in the form of a shoreline management plan with vegetative

management buffers to developed to prohibit disturbance and protect Georgia rockcress; this management plan was developed during Federal Energy Regulatory Commission (FERC) licensing (FERC 2004, pp. 7, 18-19, 29-30; Moffett 2007, p. 4). However, the southernmost portion of the Goat Rock Dam population is on privately owned land.

In total at least some portions of nine populations are on land owned by potential conservation partners; however, none of these populations have a formal management plan to benefit Georgia rockcress. These populations are afforded varying degrees of protection, and while none of these lands are likely to be developed, they could be subject to other impacts including recreation, military training, road construction, inappropriate timber harvest, and continued pressure from invasive species. None of the populations are on land that is subject to a management plan, and only the Goat Rock Dam and Blacks Bluff populations are on land on which efforts have been directed to managing for Georgia rockcress.

Historically, suitable habitat was destroyed or degraded due to quarrying, residential development, timber harvesting, road building, recreation, and hydropower dam construction. Severe impacts continue to occur across the range of this species, from quarrying, residential development, timber harvesting, road building, recreation, and hydropower dam construction, and one or more of these activities pose ongoing threats to all known populations. Given the extremely small size of Georgia rockcress populations, projects that destroy even a small amount of habitat can have a serious impact on this species, including existing genetic diversity of the species (Factor E).

Overutilization is not known to pose a threat to this species (Alison 1995, p. 10; Moffett 2007, p. 2; Schotz 2010, p. 11).

Limited browsing of Georgia rockcress plants has been noted in Georgia (Allison 1995, p. 10; Moffett 2007, p. 3; Schotz 2010, p. 11). However, disease and predation are not considered to be a threat to this species.

Georgia rockcress is listed as threatened by the State of Georgia (Patrick et al. 1995, p. 17; Chaffin 2007, p. 47). This State listing provides legal standing under the Georgia Wildflower Preservation Act of 1973. This law prohibits the removal of this and other wildflower species from public land and regulates the taking and sale of plants from private land. This law also triggers the Georgia Environmental Protection Act process in the event of potential impacts to a population by State activities on State-owned land (Moffett 2007, p. 3). However, the greater problem of habitat destruction and degradation is not addressed by this law (Patrick et al. 1995, p. 6); therefore, there is no protection from projects like road construction, construction of reservoirs, installation of utility lines, quarrying, or timber harvest that degrade or fragment habitat, especially on private lands. Moreover, the decline of the species in Georgia is also attributed to invasive species (Factor E), and there are no State regulatory protections in place to ameliorate that threat on private lands. In Alabama, there is no protection or regulation, either direct or indirect, for Georgia rockcress (Schotz 2010, pp. 2, 11).

Climate change will be a particular challenge for biodiversity because the interaction of additional stressors associated with climate change and current stressors may push species beyond their ability to survive (Lovejoy 2005, pp. 325–326). The synergistic implications of climate change and habitat fragmentation are the most threatening facet of climate change for biodiversity (Hannah and Lovejoy 2005, p. 4). Current climate change predictions for terrestrial areas in the Northern Hemisphere indicate warmer air temperatures, more intense precipitation events, and increased summer continental drying (Field et al. 1999, pp. 1–3; Hayhoe et al. 2004, p. 12422; Cayan et al. 2005, p. 6; Intergovernmental Panel on Climate Change (IPCC) 2007, p. 1181). Climate change may lead to increased frequency and duration of severe storms and droughts (Golladay et al. 2004, p. 504; McLaughlin et al. 2002, p. 6074; Cook et al. 2004, p. 1015).

While severe drought would be expected to have an effect on the plant community, including the mature canopy and canopy gap dynamic, and increased storm intensity could accelerate erosion-related disturbances, the information currently available on the effects of global climate change and increasing temperatures does not make sufficiently precise estimates of the location and magnitude of the effects. In addition, we are not currently aware of any climate change information specific to the habitat of the Georgia rockcress that would indicate which areas may become important to the species in the future.

The primary threat to extant populations of Georgia rockcress is the ongoing

invasion of nonnative species due to the degradation of its habitat. Encroachment from timber management and development in the form of bridges, roads, houses, commercial buildings, or utility lines allowing for the introduction of nonnative species has resulted in the decline of Georgia rockcress (Schotz 2010, pp. 9-10; Moffett 2007, pp. 2-7; Alison 1995, pp. 7-18). Human-induced disturbance (quarrying, residential development, timber harvesting, road building, recreation and hydropower dam construction) has fragmented river bluff habitats and created conditions so that these bluff habitats are receptive to invasion of nonnative species (Honu and Gibson 2006, pp. 263-264). Disturbance of 17 of the 18 known sites occupied by this species has provided opportunities for the invasion of aggressive, nonnative weeds, especially *Lonicera japonica* (Japanese honeysuckle). This species is a gap adaptor, that can easily invade disturbed areas to 90 meters (295 feet) into a forested habitat (Honu and Gibson 2006, p. 264). Other nonnatives include *Melia azedarach* (Chinaberry or bead-tree), *Pueraria montana* var. *lobata* (kudzu), *Albizia julibrissin* (mimosa), *Ligustrum japonica* (Japanese privet), *Ligustrum sinense* (Chinese privet), *Lygodium japonicum* (Japanese climbing fern), and *Microstegium vimineum* (Napalese browntop) (Alison 1995, pp. 18-29; Moffett 2007, p. 9; Schotz 2010, pp. 10, 19-57). While edge habitats are subject to invasion of nonnative species, a more limited group of nonnative plants can then invade closed-canopy habitats; furthermore, species with a rosette form (e.g., Georgia rockcress) are more susceptible to exclusion by some nonnatives (Meiners et al. 1999, p. 266). Georgia rockcress is not a strong competitor and is usually found in areas where growth of other plants is restrained due to the shallowness of the soils or the dynamic status of the site (e.g., eroding riverbanks) (Allison 1995, pp. 7-8; Moffett 2007, p. 4). However, nonnative species are effectively

invading these riverbank sites, and the long-term survival of the at least five populations in the Coastal Plain province is questionable (Allison 1995, p. 11). This species is only able to avoid competition with nonnative species where the soil depth is limited (e.g., rocky bluffs) (Allison 1995, pp. 7-8; Moffett 2007, p. 4)

Competition from nonnative species, exacerbated by adjacent land use changes (Factor A), likely contributed to the loss of the population at the type locality in Stewart County, Georgia (Allison 1995, p. 28), and possibly to one of the Bibb County, Alabama, populations and several other sites in this general area (Allison 2002, pers. comm.; Alabama Natural Heritage Program 2004, p. 2). Additional populations are also currently being negatively affected by competition with nonnative plants. According to Moffett (2007, p. 3), most of the sites in Georgia are being impacted by the presence of invasive plant species, primarily Japanese honeysuckle, Chinese privet, and Nepalese browntop. Japanese honeysuckle was observed growing on individual plants of Georgia rockcress at three sites visited by Allison in 1995. At a fourth site, plants growing in a mat of Nepalese browntop declined in number from 27 individuals in 1995 (Allison 1995, p. 19) to 3 in 2006 (Moffett 2007 p. 8). Allison (1995, pp. 18-28; Allison 1999, pp. 1-5) considered four other populations to be imminently threatened by the nearby presence of nonnative plants. Thus, approximately 40 percent of the populations visited by Allison in 1995 were reportedly threatened by nonnative species. By 2007, Moffett (2007, p. 3) reported all six of the Georgia rockcress populations in Georgia were threatened by nonnative species. By 2010, Schotz (2010, pp. 20-57) reported 9 of the 13 populations in

Alabama were impacted by nonnative species. Currently 14 of the 18 extant populations are threatened by nonnatives.

Given the extremely small number of total plants (fewer than 5,000 in a given year; 12 of the 18 populations have fewer than 50 plants (Schotz 2010, p. iii; Elmore 2010, pp. 1-4; Moffett 2007, pp. 2-7; Alison 1999, pp. 1-5; Alison 1995, pp. 7-18)), and that the species is distributed as disjunct populations across five physiographic provinces (Schotz 2010, pp. 9-10; Moffett 2007, pp. 2-7; Alison 1995, pp. 7-18) in three major river systems, each population is important to the conservation of genetics for the species (Garcia 2012, pp. 30-36). Only the Goat Rock Dam and Fort Benning populations are sufficiently large (greater than 1,000 individuals) to preclude a genetic bottleneck (Schotz 2010, pp. 13-57; Moffett 2007, p. 8). A genetic bottleneck would result in reduced genetic diversity with mating between closely related individuals, which can lead to reduced fitness due to inbreeding depression (Ellstrand and Elam, pp. 217-237). This species is composed of three genetic groups: a North Georgia group, a Middle Georgia group, and an Alabama group (Garcia 2012, p 32). While the Middle Georgia genetic group contains the largest populations (Goat Rock Dam and Fort Benning) and is the most important to the conservation of this species, the smaller populations in the North Georgia and Alabama genetic groups are more vulnerable to localized extirpation and represent an important conservation element for this species. Any threats that remove or further deteriorate populations can also have a detrimental effect on the existing genetic diversity of the species.

Determination

Section 4 of the Act (16 U.S.C. 1533), and its implementing regulations at 50 CFR part 424, set forth the procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants. Under section 4(a)(1) of the Act, we may list a species based on: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. Listing actions may be warranted based on any of the above threat factors, singly or in combination.

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to Georgia rockcress. Habitat degradation (Factor A) and the subsequent invasion of nonnative species (Factor E), more than outright habitat destruction, are the most serious threats to this species' continued existence. Disturbance, associated with timber harvesting, road building, and grazing, has created favorable conditions for the invasion of nonnative weeds, especially Japanese honeysuckle, in this species' habitat. Although the species is afforded some regulatory protection in Georgia, such protection is inadequate to reduce these threats, especially on private land (Factor D); furthermore, there are no such protections in Alabama. Because nearly all populations are currently or potentially threatened by the presence of nonnatives, we find that this species is warranted for listing throughout all its range, and,

therefore, we find that it is unnecessary to analyze whether it is endangered or threatened in a significant portion of its range.

The riparian bluff habitat surrounding all 18 of the known populations has been adversely impacted in some way, and in some cases the habitat has suffered multiple impacts. The most imminent and severe threat to extant populations of Georgia rockcress is the ongoing invasion of nonnative species due to the degradation of its habitat. Disturbance (Factor A, in the form of quarrying, residential development, timber harvesting, road building, recreation, and hydropower dam construction) of most of the species' known sites has provided opportunities for the invasion of aggressive, nonnative weeds, especially Japanese honeysuckle. Additional populations are also currently being negatively affected by competition with nonnative plants. According to Moffett (2007, p. 3), most of the sites in Georgia are being impacted by the presence of invasive plant species. At least 14 of the known populations are adversely impacted by nonnative species. Control of nonnative species will require active management, which is not provided for with current conservation efforts.

The Act defines an endangered species as any species that is "in danger of extinction throughout all or a significant portion of its range" and a threatened species as any species "that is likely to become endangered throughout all or a significant portion of its range within the foreseeable future." We find that the Georgia rockcress is likely to become endangered throughout its entire range within the foreseeable future, based on the immediacy, severity, and scope of the threats described above. We do not find it to

be endangered at this time because there are 18 sites spread across the geographic range; therefore the threats, while impacting all populations are not likely to eliminate all populations simultaneously, or even all populations within physiographic areas in the near future. Therefore, on the basis of the best available scientific and commercial information, we propose to list the Georgia rockcress (*Arabis georgiana*) as threatened in accordance with sections 3(20) and 4(a)(1) of the Act.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness and conservation by Federal, State, Tribal, and local agencies; private organizations; and individuals. The Act encourages cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Subsection 4(f) of the Act requires the Service to develop and implement recovery plans for the conservation of endangered and threatened species.

The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline shortly after a species is listed, preparation of a draft and final recovery plan, and revisions to the plan as significant new information becomes available. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. The recovery plan identifies site-specific management actions that will achieve recovery of the species, measurable criteria that determine when a species may be downlisted or delisted, and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (comprised of species experts, Federal and State agencies, nongovernment organizations, and stakeholders) are often established to develop recovery plans. When completed, the recovery outline, draft recovery plan, and the final recovery plan will be available on our website (<http://www.fws.gov/endangered>), or from the U.S. Fish and Wildlife Service, Ecological Services Office in Athens, Georgia (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribal, nongovernmental

organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (e.g., restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands.

If this species is listed, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the States of Alabama and Georgia would be eligible for Federal funds to implement management actions that promote the protection and recovery of Georgia rockcress. Information on our grant programs that are available to aid species recovery can be found at: <http://www.fws.gov/grants>.

Although Georgia rockcress is only proposed for listing under the Act at this time, please let us know if you are interested in participating in recovery efforts for this species. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with

respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Federal agency actions within the species' habitat that may require conference or consultation or both as described in the preceding paragraph include management and any other landscape-altering activities on Federal lands administered by the Department of Defense, U.S. Fish and Wildlife Service, and U.S. Forest Service; issuance of section 404 Clean Water Act (33 U.S.C. 1251 *et seq.*) permits by the U.S. Army Corps of Engineers; construction and management of gas pipeline and power line rights-of-way by the Federal Energy Regulatory Commission; and construction and maintenance of roads or highways by the Federal Highway Administration.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered and threatened plants. The prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61 for endangered plants and by

50 CFR 17.71 for threatened plants, apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, sell or offer for sale in interstate or foreign commerce, or remove and reduce the species to possession from areas under Federal jurisdiction. In addition, for plants listed as endangered, the Act prohibits the malicious damage or destruction on areas under Federal jurisdiction and the removal, cutting, digging up, or damaging or destroying of such plants in knowing violation of any State law or regulation, including State criminal trespass law. Certain exceptions to the prohibitions apply to agents of the Service and State conservation agencies. As discussed above (Factor D), this species is not listed in Alabama's State Wildlife Action conservation plan (Alabama Department of Conservation and Natural Resources 2005). Georgia lists the Georgia rockcress as a "high priority species" in its State Wildlife Action Plan (Georgia Department of Natural Resources 2005).

We may issue permits to carry out otherwise prohibited activities involving endangered and threatened species under certain circumstances. Regulations governing permits are codified at 50 CFR 17.62 for endangered plants, and at 50 CFR 17.72 for threatened plants. With regard to threatened plants, a permit must be issued for the following reasons: scientific purposes, to enhance the propagation or survival of the species, economic hardship, botanical or horticultural exhibition, educational purposes, or other activities consistent with the purposes and policy of the Act.

It is our policy, as published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a proposed listing on proposed and ongoing activities within the range of species proposed for listing. The following activity could potentially result in a violation of section 9 of the Act; this list is not comprehensive:

- Unauthorized collecting, handling, possessing, selling, delivering, carrying, or transporting of the species, including import or export across State lines and international boundaries, except for properly documented antique specimens of these taxa at least 100 years old, as defined by section 10(h)(1) of the Act.

Questions regarding whether specific activities would constitute a violation of section 9 of the Act should be directed to the Ecological Services Office in Athens, Georgia (see **FOR FURTHER INFORMATION CONTACT**). Requests for copies of the regulations concerning listed animals and general inquiries regarding prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, 105 West Park Drive, Suite D, Athens, GA 30606; telephone 706-613-9493; facsimile 706-613-6059.

Required Determinations

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (1) Be logically organized;
- (2) Use the active voice to address readers directly;
- (3) Use clear language rather than jargon;
- (4) Be divided into short sections and sentences; and
- (5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with listing a species as endangered or threatened under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited in this rule is available on the Internet at *<http://www.regulations.gov>* or upon request from the Field Supervisor, Ecological Services Office in Athens, Georgia (see **FOR FURTHER INFORMATION CONTACT** section).

Authors

The primary authors of this proposed rule are the staff members of the Ecological Services Office in Athens, Georgia (see **FOR FURTHER INFORMATION CONTACT**).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 1531-1544; 4201-4245, unless otherwise noted.

2. In § 17.12(h), add an entry for “*Arabis georgiana*” to the List of Endangered and Threatened Plants in alphabetical order under FLOWERING PLANTS, to read as follows:

§ 17.12 Endangered and threatened plants.

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(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						

FLOWERING PLANTS

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<i>Arabis georgiana</i>	Georgia rockcress	U.S.A. (GA and AL)	Brassicaceae	T		NA	NA
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Dated: August 26, 2013

Rowan W. Gould

Acting Director, U.S. Fish and Wildlife Service

Billing Code 4310-55-P

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